The specific gravity of the spring-felled alburnum was 0·666; that of the winter-felled, 0·565. Equal blocks of each alburnum were cleaved into thin pieces; and, when perfectly dry, suspended in a damp room for ten days. One thousand grains of the alburnum of the spring-felled tree gained 162 grains, and of the winter-felled 145; so that there is an obvious difference in the properties of the two; and Mr. Knight doubts not, by taking the bark off in the spring, and not felling the tree till winter, that the timber would be materially improved. He also thinks that these observations are applicable to the heart wood as well as to the alburnum, though he has not at present any very conclusive evidence to offer on that subject.

On the Mode of Formation of the Canal for containing the Spinal Marrow, and on the Form of the Fins (if they deserve that name) of the Proteo-Saurus. By Sir Everard Home, *Bart. V.P.R.S.* Read May 4, 1820. [*Phil. Trans.* 1820, *p.* 159.]

The structure of the vertebræ of the Proteo-saurus is intermediate between that of the lizard tribe and cartilaginous fishes, and they have so close a resemblance to the vertebræ of the shark, as often to have been mistaken for them. They are composed of bone, and have a body and canal for the spinal marrow, and a process for the attachment of muscles; but the body is made up of one piece, while the spinal process, and two lateral branches which belong to it, are made up of another; between these there is no union but a species of joint peculiar to themselves; the hole in the middle thus formed appears unusually small.

In the specimen from which the above description is taken, there is also a fore foot, paddle, or fin,—for it is difficult to say which it should be called,—and which, though not quite perfect, is more so than in any other extant specimen. It presents nothing like the thumb or claw for laying hold, which distinguishes the animals that occasionally inhabit the sea, and come ashore to lay eggs or deposit young. If it be called a fin, it is to be understood as made up of bony materials, the joints of which are extremely numerous, so that it may possibly perform the same office.

An illustrative drawing accompanies this paper.

Some Experiments on the Fungi which constitute the Colouring Matter of the Red Snow discovered in Baffin's Bay. By Francis Bauer, *Esq. F.L.S. In a Letter addressed to the Right Hon. Sir* Joseph Banks, *Bart. G.C.B. P.R.S. &c. &c.* Read May 11, 1820. [*Phil. Trans.* 1820, *p.* 165.]

To ascertain whether the fungi mentioned in the title of this paper vegetate in the snow, Mr. Bauer put a small portion of them into a phial filled with compressed snow, and placed in the open air in a N.W. aspect. In fifty-two hours they had formed a red sediment; and the snow being thawed the water was poured off, and a fresh

portion added as before. In two days the mass of fungi was raised in little pyramids, which gradually increased in height, so as nearly to fill the phial, and occupied the cells of the mass of ice. A thaw now continued for some time, and the fungi fell to the bottom of the water in the phial, where they occupied about double their original bulk, having sustained an increase to that amount during their vegetation in the ice and snow.

In water these fungi appear also perceptible of vegetation, but they produce new fungi of a green instead of a red colour. By exposure to excessive cold the primitive fungi are killed, but their seed still retains vitality, and if immersed in snow regenerates new fungi, generally of a red colour. The author thinks that snow is undoubtedly the native soil of these fungi.

This paper is illustrated by a drawing, showing the original appearance of the fungi in the snow water from Baffin's Bay, and their gradual increase in the phials, as described in this abstract.

Some Account of the Dugong. By Sir Thomas Stamford Raffles, *Governor of Sumatra. Communicated in a Letter to Sir* Everard Home, *Bart. V.P.R.S.* Read May 18, 1820. [*Phil. Trans.* 1820, *p.* 174.]

The form of the Dugong resembles that of the common Cetacea. The skin is smooth and thick, with a few scattered hairs, and the head small in proportion, with two short tusks projecting from the extremity of the upper jaw. The place of the incisors is substituted by the rough bristly surfaces of the palate and jaws, which enable the animal to browse upon marine vegetables. There are twelve cylindrical molares, with flat crowns. The aperture of the ears is remarkably small. There are no dorsal or ventral fins; but the place of the anterior extremities is supplied by fins, which, however, are not capable of supporting the animal when out of water.

Upon dissection, the skin was found three quarters of an inch thick. The stomach has two appendages opening into it, near the junction of the duodenum; the intestinal canal is long; the liver has two large and two smaller lobes, one of which is tongue-shaped and covers the gall-bladder; the kidneys are large, and the urinary bladder probably capable of considerable distention; the testicles are placed a little below the kidneys; the urethra opens in a small tubercle between the two lobes of the glans penis.

In the thorax the thymus gland is large, black, and friable; the lungs not lobulated; and the ventricles of the heart, being separated at their points, give it a double appearance.

In regard to the skeleton, the head is remarkable for the manner in which the anterior part of the upper jaw bends downwards, the lower jaw being proportionally truncated. There are fifty-two vertebræ, eighteen ribs on each side, and the sternum is bifurcate at the apex, and articulated to the cartilages of the upper ribs. There is no pelvis nor posterior extremities, but opposite the eighth or tenth